Abstract

Background: Chronic obstructive pulmonary disease (COPD) is a common preventable and treatable disease. Low level laser (LLL) therapy appears to be a promising noninvasive treatment modality for COPD.

Aim of the study: Study the short-term effects of LLL therapy on clinical and cardiac status in stable COPD patients.

Patients and methods: Thirty stable COPD patients were divided into laser and control groups (15 pts each). Medical treatment was optimized in each group with the addition of LLL in the laser group.

In addition to history and physical examination, each patient had MMRC scale, 6 MWT, echocardiography with measurements of RV dimensions, RV systolic and diastolic function, TAPSE, and lateral tricuspid annulus tissue Doppler velocities before and after LLL with a frequency of 5 sessions/week for 2 successive weeks.

Results: No significant differences in both groups regarding demographic data. The laser group had higher PASP, lower E´, and higher A´ velocities versus control with p 0.009, 0.03, and <0.0001 respectively.

The laser group showed more improvement in MMRC scale and 6MWT versus control. 75% of laser patients showed improvement in MMRC scale versus 20% in the control. In laser group, 6MWT was 24.4±10.4 before the study versus 52.9±14.7 at the end of the study, p 0.001. In control, 6MWT was 32.4±14.9 versus 40.1±19.2, p 0.003. No significant changes between any of the echocardiographic criteria before and after the study.

Conclusion: The use of LLL was associated with more clinical improvement. No echocardiographic changes were noticed after LLL.

Keywords: laser, acupuncture ,COPD, right ventricle, TDI